

USSR

LUPUNOV, I. N., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, Vol XIII, No 11, 1970, pp 1,607-1,611

the cation losing some of its iogenic groups. In the case of  $\text{MnO}_3$ ,  $\text{H}_2\text{O}_2$  and  $\text{KBrO}_3$  in an acid medium at 50 and 80°C, there is oxidation of the cation matrix with formation of additional carboxyl groups. Finally, with oxidation by  $\text{K}_2\text{Cr}_2\text{O}_7$  and  $(\text{NH}_4)_2\text{S}_2\text{O}_8$ , there is a sharp increase in swelling of the action.

2/2

- 23 -

USSR

UDC 331.875.4.676

ROMANENKOV, V. I., Engineer (Head of the Main Computer Center of the Ministry of the Cellulose-Paper Industry of the USSR) and KOSAREV, V. P., Candidate of the Economic Sciences (Moscow Financial Institute)

"Acquisition and Transmission of Information in an Branched Automatic Control System"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 11, 1973, pp 26-27

**Abstract:** A description is given of a branched automatic control system for improving the administrative system in the Ministry of Cellulose-Paper Industry, USSR. The technical basis of the system is the Main Computer Center, which is equipped with the Minsk-32 computer; three combinations of alphanumeric punched card/tape computers; and devices for the reception, transmission, and storage of information. A list of the functional subsystems in the overall equipment is given, together with a description of how they are used for administrative purposes. Technical and economic advantages of the system are discussed. Also discussed is a special "Control" device assembly, which improves the quality of digital information reception from telegraph communication lines.

1/1

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USSR

KOSAREV, Yu. G.

"Systems of Exchange Between Branches of Parallel Algorithms"

Vychisl. Sistemy [Computer Technology -- Collection of Works], No 51, Novosibirsk, 1972, pp 70-75 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V597, by the author).

Translation: Based on the experience of construction and realization of a large number of classes of problems on the Minsk-222 computer, the intensity and nature of interactions between branches of parallel algorithms are studied. It is established that when the method of deparallelizing by cycles is used, the time expended in systems interactions is one to two orders of magnitude less than the time expended in calculation. Systems of exchange of translation type ("one-all") and paired neighbor systems ("each-neighbor"), easily realized in trunk-type systems, are most frequently used.

1/1

73 -

USSR

UDC: 51.155.001.57:681.3.06

KOSAREV, Yu. G., KUCHIN, N. V.

"A Parallel Algorithm for Solving a Problem in Taxonomy"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 42,  
Novosibirsk, 1970, pp 3-11 (from RZh-Kibernetika, No 11, Nov 71, Abstract  
No 11V881)

Translation: A so-called parallel algorithm is proposed which permits the use of parallel computation on several machines connected in a system of the "Minsk-222" type for solving a problem in taxonomy, simplifies computation by substituting a hypercube for the hypersphere, and enables the use of a denser, and at the same time more computationally convenient form of arrangement of the initial data and parallel processing of many points in a single computer. It is noted that the solution process is appreciably accelerated if hyperplanes perpendicular to the coordinate axes are used as the resolving functions. This makes it possible to cut off computation at the first coordinate for which the assumed condition is not satisfied, and to effectively carry out computation simultaneously for many points with the aid of logic operations. For this purpose the initial data are recorded vertically by digital places rather than by words. V. Mikheyev.

1/1

USSR

UDC 51:621.391

KOSAREV, V. G.

"The Structures of Computer Systems Which are Stable with Changing Numbers of Machines"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 42, Novosibirsk, 1970, pp 59-73, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V446 by G. Blokhina).

Translation: Problems of the reliability of computer systems are studied. A structure is suggested which is stable to changes in the number of elements in the structure, and a number of properties of this structure are established.

USSR

OIA 681.5.0013

BEL'BITSKIY, I. V., KOSAREV, Yu. G.

"The Systems Approach to the Construction of Translators for Computer Systems"

Vychisl. Sistemy [Computer System -- Collection of Works], No 42, Novosibirsk, 1970, pp 12-21, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V781 by V. Mikheyev).

Translation: Approaches to the solution of the problem of creation of an effective system for automation of programming for high productivity computer systems (CS) are discussed. It is noted that such a system must satisfy two basic requirements: it must be high effective -- the operating program must be comparable in machine time to a similar program composed "manually" using the internal machine language of the system; it must consider the specifics of preparation of problems for computer systems -- the process of parallel programming should make it approximately as difficult as the process of programming for one machine. A method of solution of this problem by stages by decreasing the volume and complexity of work performed in preparation of the initial program from stage to stage is suggested. 10 Biblio. Refs.

1/1

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USSR

UDC: 681.3

GUSHCHENSKOV, V. N., ZHAVRID, L. M., KAZUSHCHIK, V. A., KOVAREV, Yu. G.,  
SAVIK, N. P.

"Updating the Command System of the 'Minsk-222' Computer System"

v sb. Vychisl. sistemy (Computer Systems--collection of works), vyp.  
42, Novosibirsk, 1970, pp 74-80 (from RZh-Kibernetika, No 9, Sep 71,  
Abstract No 9V548)

[No abstract]

1/1

- 50 -

Powder Metallurgy

USSR

UDC: 621.762:669.018.29

BUNDUR, G. K., KOSAREVA, I. B., TSUKERMAN, S. I.

"Production of Corrosion-Resistant Parts by Powder Metallurgy"

Nizkovol'tn. Apparatostroyeniye [Low-Voltage Apparatus Construction -- Collection of Works], Kiev, Tekhnika Press, 1973, pp 99-104 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G418, by S. Krivonosova).

Translation: A technological process is suggested for preparation of parts of Fe powder for automatic breakers, based on cementation, diffuse chromizing and heat treatment. The results of the tests of corrosion resistance and wear resistance showed that parts of type 3Kh13 stainless steel can be replaced by metal ceramic diffusion chromized parts, with a savings of 87,000 rubles per year, saving 27 tons of stainless steel per year. 2 figures, 1 table, 5 biblio. refs.

1/1

USSR

UDC: 621.315.592

SEVERDENKO, V. P., Academician of the Academy of Sciences of the ESSR, LAEV-  
NOV, V. A., KOSAREVICH, Ye. M., Minsk Radio Engineering Institute

"Switching Effects in Cupric Oxide Films"

Minsk, Doklady Akademii Nauk ESSR, Vol 16, No 6, Jun 72, pp 497-498

**Abstract:** It is shown that cupric oxide films can be used as a basis for thin-film elements with switching and memory properties. The films were prepared by an anodic electrolytic process in potassium hydroxide. The specimens showing switching effects were obtained by stopping the formation process at points on the potentiodynamic curve lying beyond the second polarization current maximum. The current-voltage curve for these specimens shows two stable states: the initial (closed) state with low conductivity, and an open state with high conductivity. In the closed state the diode structure shows a resistance of more than a megohm, and in the open state the resistance is only a few dozen ohms. Switching from the high-resistance to the low-resistance state takes place at potentials of 0.4-40 v, depending on the conditions of formation of the oxide film (the specific point on the potentiodynamic curve at which the process is cut).

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USSR

SEVERDENKO, V. P., DAN BSSR, No 6, Jun 72, pp 497-498

off. With elements in which switching occurs at 0.5-2 v the switching process takes place at the frequency of the applied voltage. When switching occurs at more than 2v, the element "remembers" the state i. e., it remains in the altered state when the voltage is disconnected. The reverse state can be restored by a current pulse lasting  $10^{-7}$ - $10^{-5}$  sec. The effect is observed from room temperature to 120°C. The elements have stable characteristics and, with some improvement, could be used as switching and memory elements in computer technology.

2/2

USSR

UDC 621.771.073.001.5

KOSARIMOV, Ye. N., POLUKHIN, P. I., and ZINOV'YEV, A. V.

"A Calculation of the Distribution of Inter-Roll Pressure on Four-High Sheet Rolling Mills with Anti-Bend Feature in Working Rolls"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya" Publishing House, No 64, 1970, pp 63-68

Translation: A method is proposed for calculating the inter-roll pressure when rolling on a four-high mill with unshaped working and backup rolls using the force of a positive bend between the roll necks. A comparison is made between calculated and experimental data which demonstrates that their convergence is satisfactory. Three illustrations.

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USSR

UDC 621.771.073.001.5

KOSARIMOV, Ye. N., POLUKHIN, V. P., ZINOV'YEV, A. V., and GOLUBCHIKOV, V. A.

"Calculating the Camber of the Backup Roll Taking Into Account the Unevenness of the Curve of Inter-Roll Pressure"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya"  
Publishing House, No. 64, 1970, pp 122-124

Translation: A method is proposed for calculating the camber of the backup roll of a four-high mill, taking into account the uneven distribution of inter-roll pressure over the length of the roll barrels. It is shown that, in the actual range of unevenness of inter-roll pressure, bending deflection may vary by 20 percent at the same pressure on the housing screws.

1/1

1/2 049 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--STUDIES ON THE EFFECTS OF THE SPACE SOLAR RADIATION ON SPACECRAFT  
MATERIALS AND COATINGS -U-  
AUTHOR-(02)-KOSELKIN, V.V., DENISOV, Y.N.

COUNTRY OF INFO--USSR

SOURCE--FOURTH CRANFIELD FLUIDICS CONFERENCE 17TH-20TH MARCH 1970.  
COVENTRY.  
DATE PUBLISHED---MAR 70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, MATERIALS, SPACE TECHNOLOGY

TOPIC TAGS--SOLAR RADIATION, PROTECTIVE COATING, SPACE RADIATION,  
AEROSPACE MATERIAL, SPECTRUM, MATERIAL DEGRADATION, SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1185

STEP NO--UK/0000/70/000700/0000/0000

CIRC ACCESSION NO--AF0134864

UNCLASSIFIED

2/2 049

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0134864

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SHORT WAVE PART OF THE SOLAR RADIATION IN SPACE MAY CAUSE DEGRADATION AND CHANGES OF PROPERTIES OF OPTICAL MATERIALS, THERMAL CONTROL COATINGS AND SOME ORGANIC MATERIALS. THE FLIGHT TEST OF PASSIVE THERMAL CONTROL COATINGS ABOARD "KOSMITS" SATELLITES HAVE SHOWN THAT SOLAR ABSORPTANCE OF SOME COATINGS MAY BE INCREASED BY 2-2.5 TIMES DUE TO SPACE RADIATION. A NUMBER OF SOURCES SPACE SOLAR RADIATION IS INVESTIGATED. RECOMMENDATIONS ARE SUGGESTED FOR CHOOSING A SOURCE WITH REQUIRED ENERGY AND SPECTRUM PERFORMANCE, WHICH ENABLES TO SIMULATE THE EFFECT OF THE SPACE SOLAR RADIATION ON MATERIALS. THE DEPENDANCE OF THE EXPERIMENTAL RESULTS ON A SPECTRUM OBTAINED DATA OF DIFFERENT MATERIALS TESTS. PRINCIPAL RECOMMENDATIONS ON TEST METHODS OF THE SPACE SOLAR RADIATION EFFECT ON MATERIALS ARE GIVEN. THE POSSIBILITIES OF ACCELERATED TESTS OF MATERIALS FOR LONG DURATION SPACE MISSIONS ARE DISCUSSED.

UNCLASSIFIED

USSR

UDC 613.633-074-71

KOSENKO, A. I., Candidate of Biological Sciences, Scientific Research Institute of Industrial Hygiene and Occupational Diseases, Kharkov

"A Modified Tubular Electrostatic Precipitator for Collecting Dust Samples From the Air"

Moscow, Gigiiena i Sanitariya, No 8, Aug 70, pp 68-70

Abstract: A new electrostatic precipitator is proposed. The device, a modification of an earlier model, consists of a pair of inlet tubes (to permit collecting two samples at each location), a transistorized power source which creates the necessary difference in potentials between the electrodes of the inlet tubes, and an aspirator. The precipitating electrodes in the inlets are brass tubes (125 mm long, 19 mm internal diameter) mounted in plexiglas holders. The corona electrode, a steel wire 90 mm long and 0.5 mm in diameter, passes through the precipitating electrode into the holder. The dust in the tube settles on a base made of aluminum foil. The precipitator is particularly useful in industrial plants where use of filtering materials would create some difficulty, e.g., where a large amount of dust has to be collected at air temperatures above 60°C.

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USSR

UDC 621.391.24:621.391.96

VAGAPOV, A.M., KOSENKO, G.G.

"General Approach To Kotel'nikov, Shannon, And Kul'tbek Radar Information Measures"

Radiotekhnika i elektronika, Vol XVII, No 7, July 1972, pp 1521-1526

Abstract: In the task of analyzing the information content of various criteria of radar objects a problem arises first of all about radar information measures. At present the information measures of Kotel'nikov, Shannon, and Kul'tbek (etc.) are the most widespread. By Kotel'nikov's measure is understood the average difference of the  $\pi$  a posteriori and  $\pi$  a priori maximum probabilities of correct recognition of a certain situation. However, up to the present in the literature a single approach is missing to the construction of radar information measures in general and to measures of KSK in particular. In the present report an attempt is made to construct such a general approach, at least including the measures of KSK. For definiteness and simplicity the report considers discrete channels of information transmission in the statistical problem of recognitio of objects of a given finite alphabet. 3 ref'. Received by editor, 21 Sept. 1971.

1/1

AA0038357 Kosenko L.V. UR 0482 3

Soviet Inventions Illustrated, Section I Chemical, Darwent, 1-70

239707 ANABAENA VARIABILIS K-1 is a new more effective strain of blue-green algae Anabaena variabilis which fix atmospheric nitrogen. When cultured in a nutrient medium not containing nitrogen, the strain K-1 can fix up to 11 mg of nitrogen per litre in a dry, (compared with 4.4 mg/l day of other strains of this species) the strain K-1 was found in the river Uch in Zhitomir district. Barrel-like grainy cells have a width of 4.2 - 5 $\mu$  and a length of 2.8-6.0 $\mu$ . Oval spores are associated with heterocysts. Blue-green coloures accumulate on the surface of the medium. The strain can be cultivated under stationary aerobic conditions or with forced supply of air enriched in CO<sub>2</sub>. In the first case the pH changes from 6.5 to 9, in the second form 6.5 to 7.0. The optimum temp. is 33-35°C. A suitable liquid

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AA0038357

medium contains (in mg./ml):  $\text{KH}_2\text{PO}_4$  20,  $\text{MgSO}_4$  50,  $\text{FeSO}_4$  10, triton B 16,  $\text{CaCO}_3$  750 and minor amounts of micronutrients including  $\text{Ca}(\text{NO}_3)_2$ ,  $\text{CuSO}_4$ ,  $\text{ZnSO}_4$ ,  $\text{MnSO}_4$ ,  $\text{H}_2\text{BO}_3$ , and ammonium molybdate. A wide range of amino acids are produced, including cystine, lysine, histidine, arginine, etc. The cultivation can be carried out in enclosed systems or as "green fertiliser" in rice fields.

23.2.67. as 1139173/30-15, RUBENCHIK, L.I. et al.  
(11.8.69) Bul. 11/18.3.69. Class 45f, Int. Cl.  
A 01g. |

bD

AUTHORS: Rubenchik, L. I.; Kordyum, V. A.; Smirnova, N. N.;  
Zharova, L. G.; Kosenko, L. V.; Ratushnaya, M. Yu.;  
Kirillova, V. S.

2/2

19731486

USSR

UDC 577.1:615.7/9

KIRICHEK, L. T., KARAMYSHEV, A. N., NALBAT, A. S., KOBENKO, P. I.,  
KHARCHENKO, N. S.

"Some Aspects of the Systemic Toxic Action of Metaphos"

Farmakol. i toksikologiya. Resp. mezhved. sb. (Pharmacology and Toxicology. Republic Interdepartmental Collection of Works), 1970,  
No 5, pp 205-208 (from RZh-Biologicheskaya Khimiya, No 19, 10 Oct  
70, Abstract No 19 F1803 by A. Ignat'yev)

Translation: After a single injection of rats, cats, and rabbits with metaphos at doses of 1-1/2 LD<sub>50</sub>, there are not only the specific toxic effects produced by the insecticide but changes in liver function: decrease in total serum protein, dysproteinemia, decreased cholinesterase activity in serum and liver tissue, positive thymol test, change in duration of prothrombin time, decrease in glycogen level of the liver, increased amount of protein in urine, decreased diuresis after a water load, and histologic changes in all organs.

1/1

USSR

UDC: 621.372.061

KOSENKO, S. S.

"Probability of Error in a Radio Relay Channel With Pulse Phase Modulation, Frequency-Multiplexed".

Tr. Mosk. in-ta inzh. zh.-d. transp. (Transactions of the Moscow Institute of Railroad Transport Engineers) 1970, no. 365, pp 84-89  
(from RZh-Radiotekhnika, No. 3, March 71, Abstract no. 3A120)

Translation: An expression is found for the error probability in a radio relay line with pulse phase modulation (frequency multiplexed) as a function of the noise in a telephone channel. (no illustration, bibliography of five. Resume)

1/1

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K Reliability Theory

UDC 621.396.2:621.391.83

USSR

KOSENKO, S. S.

"Reliability of Radio Relay Lines and Prospects for Improving It"

Tr. Mosk. in-ta inzh. zh.-d transp. (Works of Moscow Institute of Railroad  
Transportation Engineering), 1970, vyp. 330, pp 34-37 (from RZh-Radiotekhnika,  
No 8, Aug 70, Abstract No 8A328)

Translation: Some data on the reliability of radio relay lines of railroad  
transportation are presented. The prospects for improving the reliability by  
decreasing fading are investigated. The magnitude of the spatial separation  
of the antennas is calculated. The bibliography has eight entries.

1/1

USSR

UDC 632.95

PANASYUK, V. G., KOSENKO, V. A., PANASYUK, L. V.

"Plant Growth Stimulator"

USSR Author's Certificate No 340382, filed 5 Feb 70, published 23 Jun 72  
(from RZh-Khimiya, No 2 (II), Feb 73, Abstract No 2N555)

Translation: Phenoxyacetate derivatives of chlorinated hydrolyzed lignin of sunflow hulls containing up to 12.25% phenol groups and 13.40% carboxyl groups are recommended as plant growth stimulators. As a result of oxidation of the lignin during chlorination in the presence of water, quinone groups are formed which give rise to the physiological activity of the growth stimulator. Sulfate and other forms of lignins can also be used as the raw material to obtain the compound. The proposed stimulator promotes an increase in the height of wheat plants by 21.2% and corn by 80.8%; the length of the wheat root system increased by 49.1% and that of the corn roots by 69.4%. The catalase activity for wheat increases by 100 ml O<sub>2</sub>/gram of leaf for wheat and 75 ml O<sub>2</sub>/gram of leaf for corn. The vitamin C content in the leaves and the sugar content in the plant tissue is increased.

1/1

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USSR

UDC 669.018.4:53

SAMSONOV, G. V., KUNITSKIY, YU. A., and KOSENKO, V. A. Institute of Problems of Material Science, Academy of Sciences UkrSSR

"Electric Resistance of Iron, Cobalt, and Nickel Borides"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72,  
pp 884-887

**Abstract:** The temperature dependences of the electric resistance  $\rho$  of borides of metals of the iron family were experimentally investigated in the 20-1000°C temperature range. The initial materials for the synthesis of borides were powders of metals (99.95% purity) and boron (99.95% purity). The electric resistance was measured on 12-14 mm-long specimens 8 mm in diameter. The results, shown in diagrams of  $\rho$ -f(T) for the boride phase systems Fe-B, Co-B, and Ni-B, are discussed from the viewpoints of structural and electronic formations of the systems. The effect of increased boron content on  $\rho$ , T, and the magnetic moment of iron and cobalt borides is compared with the character of  $\rho$ -f(T)-curves of nickel borides. One illustration, one table, nineteen bibliographic references.

1/1

UDC: 669.015

USSR

SAMSONOV, G. V., KOSENKO, V. A., RUD', B. N., and SIDOROVA, V. C.

"Some Characteristics of Palladium Boride"

Tomsk, Izvestiya Vuz--Fizika, No 6, 1972, pp 146-147

Abstract: Asserting that there is little data on the characteristics of the phases of Pd-B systems, the authors of this brief communication investigate the conditions for obtaining palladium boride by synthesizing the elements and measure the electrical resistivity and thermal emf in the 20-800° C range. The original material used for synthesizing the borides were amorphous boron with a purity of 99.6% and palladium powder 99.99% pure. It was established, by thermal, x-ray, metallographic, and chemical analyses, that the synthesis process for  $Pd_3B$  had to be done in a temperature interval of 700-900° for 5-6 hours, while the interval on 600-950° for 60-70 hours was required to synthesize  $Pd_5B_2$ . Curves are plotted for the resistivity of the  $Pd_3B$  and  $Pd_5B_2$  phases and for the thermal emf of those phases as functions of the temperature. The authors are associated with the 50th Anniversary of the Great October Socialist Revolution Polytechnical Institute at Nov.

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1/2	014	UNCLASSIFIED	PROCESSING DATE--13NOV70
TITLE--EXPERIMENTAL REDESIGN OF APPARATUS FOR THE ATMOSPHERIC DISTILLATION OF PETROLEUM			
AUTHOR--(051)-KARAMAZOV, S.A., ALIYEV, A.A., AKHMEEDOV, N.I., KOSENKOVA, V.G., DAVIDYAN, L.K.			
COUNTRY OF INFO--USSR			
SOURCE--NEFTEPERERAK. NEFTKHIM. (MOSCOW) 1970, (4), 10-12			
DATE PUBLISHED-----70			
SUBJECT AREAS--MATERIALS, MILITARY SCIENCES			
TOPIC TAGS--PETROLEUM DISTILLATION, PETROLEUM REFINING EQUIPMENT, HEAT EXCHANGER			
CONTROL MARKING--NO RESTRICTIONS			
DOCUMENT CLASS--UNCLASSIFIED		STEP NO--UR/0318/T070007004/0010/0012	
PROXY REEL/FRAME--3005/1962		UNCLASSIFIED	
CIRC ACCESSION NO--AP0133806			

UNCLASSIFIED

PROCESSING DATE--1989-07-19

2/2 014  
CIRC ACCESSION NO--APO133806  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFICIENCY OF THE PISTN.  
COLUMNS WAS IMPROVED BY APPLYING INTERMEDIATE CIRCULATING REFLUX ON 2  
CROSS SECTIONS. THE CAPACITY OF THE PLANT WAS INCREASED BY INCREASING  
THE TOTAL HEAT EXCHANGING SURFACE TO LARGER THAN OR EQUAL TO 13.6 M<sup>2</sup>.  
PRIME2-TON FEED. THE EFFICIENCY OF THE HEAT EXCHANGERS WAS INCREASED  
WHEN THE VELOCITY OF PETROLISUM FEED WAS INCREASED TO 1.65 M/SEC.  
FACILITY: BAKIN. NEFTEPERERAB. ZAVOD, BAKN, USSR.

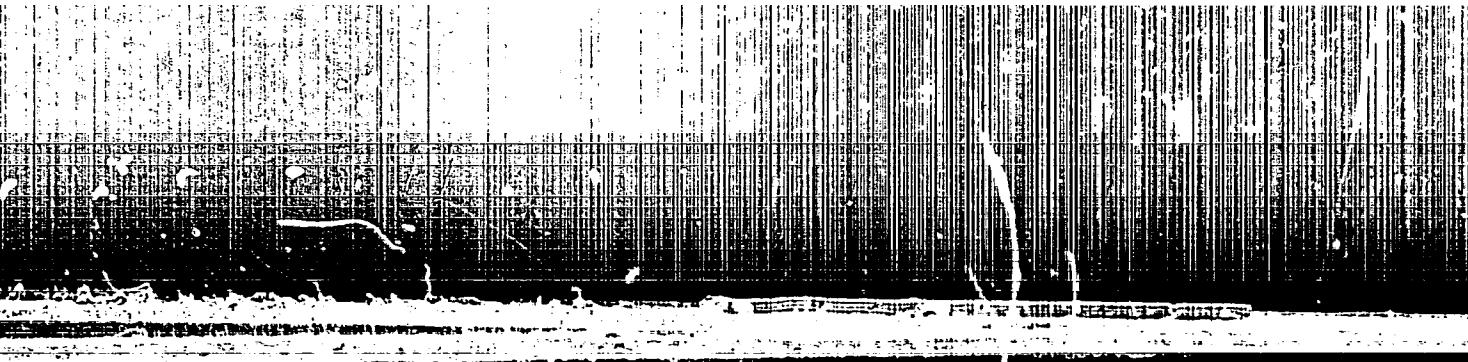
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KOSENKO, V. M.

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002201510016-3



APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002201510016-3"

UDC 577.1:615.7/9

USSR

KIRICHEK, L. T., KARAMYSHEV, A. N., NALBAT, A. S., NOSENKO, P. I.,  
KHARCHENKO, N. S.

"Some Aspects of the Systemic Toxic Action of Metaphos"

Farmakol. i toksikologiya. Resp. medvied. ab. (Pharmacology and  
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70, Abstract No 19 F1803 by A. Ignat'yev)

Translation: After a single injection of rats, cats, and rabbits  
with metaphos at doses of 1-1/2 LD<sub>50</sub>, there are not only the speci-  
fic toxic effects produced by the insecticide but changes in liver  
function: decrease in total serum protein, dysproteinemia, decreased  
cholinesterase activity in serum and liver tissue, positive thymol  
test, change in duration of prothrombin time, decrease in glycogen  
level of the liver, increased amount of protein in urine, decreased  
diuresis after a water load, and histologic changes in all organs.

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UDC: 621.372.061

USSR

KOSENKO, S. S.

"Probability of Error in a Radio Relay Channel With Pulse Phase Modulation, Frequency-Multiplexed"

Tr. Mosk. in-ta inzh. sh.-a. transp. (Transactions of the Moscow Institute of Railroad Transport Engineers) 1970, no. 365, pp. 84-89  
(from RZh-Radiotekhnika, No. 3, March 71, Abstract no. 34120)

Translation: An expression is found for the error probability in a radio relay line with pulse phase modulation (frequency multiplexed) as a function of the noise in a telephone channel. The illustration, bibliography of five. ResUME

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USSR

KOSENKO, S. S.

"Reliability of Radio Relay Lines and Prospects for Improving It"

Tr. Mosk. in-ta inzh. zh.-d transp. (Works of Moscow Institute of Railroad  
Transportation Engineering), 1970, vyp. 330, pp 34-37 (from ~~RKh-Radiotekhnika~~,  
No 8, Aug 70, Abstract No 8A328)

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transportation are presented. The prospects for improving the reliability by  
decreasing fading are investigated. The magnitude of the spatial separation  
of the antennas is calculated. The bibliography has eight entries.

K Reliability Theory

UDC 621.396.2:621.391.83

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UDC 632.95

USSR

PANASYUK, V. G., KOSENKO, V. A., PANASYUK, L. V.

"Plant Growth Stimulator"

USSR Author's Certificate No 340382, filed 5 Feb 70, published 23 Jun 72  
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USSR

UDC 669.018.4:53

SAMSONOV, G. V., KUNITSKIY, YU. A., and KOSYGIN, V. A. Institute of Problems of Material Science, Academy of Sciences USSR

"Electric Resistance of Iron, Cobalt, and Nickel Borides"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, № 4, Apr 72,  
pp 884-887

**Abstract:** The temperature dependences of the electric resistance  $\rho$  of borides of metals of the iron family were experimentally investigated in the 20-1000°C temperature range. The initial materials for the synthesis of borides were powders of metals (99.9% purity) and boron (99.7% purity). The electric resistance was measured on 12-14 mm-long specimens 3 mm in diameter. The results, shown in diagrams of  $\rho = f(T)$  for the boride phase systems Fe-B, Co-B, and Ni-B, are discussed from the viewpoints of structural and electronic formations of the systems. The effect of increased boron content on  $\rho$ , T, and the magnetic moment of iron and cobalt borides is compared with the character of  $\rho-f(T)$ -curves of nickel borides. One illustration, one table, nineteen bibliographic references.

1/1

UCC: 669.018

USSR

SAMSONOV, G. V., KOSENKO, V. A., RUD', B. M., and SIBOROVA, V. G.

"Some Characteristics of Palladium Boride"

Tomsk, Izvestiya VUZ--Fizika, No 6, 1972, pp 146-147

Abstract: Asserting that there is little data on the characteristics of the phases of Pd-B systems, the authors of this brief communication investigate the conditions for obtaining palladium borides by synthesizing the elements and measure the electrical resistivity and thermal emf in the 20-800° C range. The original material used for synthesizing the borides were amorphous boron with a purity of 99.6% and palladium powder 99.99% pure. It was established, by thermal, x-ray, metallographic, and chemical analyses, that the synthesis process for Pd<sub>2</sub>B had to be done in a temperature interval of 700-900° for 5-6 hours, while the interval of 800-950° for 60-70 hours was required to synthesize Pd<sub>5</sub>B<sub>2</sub>. Curves are plotted for the resistivity of the Pd<sub>2</sub>B and Pd<sub>5</sub>B<sub>2</sub> phases and for the thermal emf of those phases as functions of the temperature. The authors are associated with the 50th Anniversary of the Great October Socialist Revolution Polytechnical Institute at Klev.

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1/2 014 UNCLASSIFIED PROCESSING DATE--10-12-1970  
TITLE--EXPERIMENTAL REDESIGN OF APPARATUS FOR THE ATMOSPHERIC DISTILLATION P  
OF PETROLEUM -U-  
AUTHOR-105)-FAKAMAZOV, S.A., ALIYEV, A.A., AKHMEDOV, N.I., KOSENKOV, V.G.,  
DAVIDYAN, L.K.  
COUNTRY OF INFO--USSR  
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (4), 10-12  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MILITARY SCIENCES  
TOPIC TAGS--PETROLEUM DISTILLATION, PETROLEUM REFINING EQUIPMENT, HEAT EXCHANGER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/1962

STEP NO--UR/0318/70/000/004/001D/0012

A00133806

Z/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--APO133606  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFICIENCY OF THE DISTN.  
COLUMNS WAS IMPROVED BY APPLYING INTERMEDIATE CIRCULATING REFLUX ON 2  
CROSS SECTIONS. THE CAPACITY OF THE PLANT WAS INCREASED BY INCREASING  
THE TOTAL HEAT EXCHANGING SURFACE TO LARGER THAN OR EQUAL TO 18.6 M<sup>2</sup>.  
PRIME2-TON FEED. THE EFFICIENCY OF THE HEAT EXCHANGERS WAS INCREASED  
WHEN THE VELOCITY OF PETROLEUM FEED WAS INCREASED TO 1.59 M-SEC.  
FACILITY: BAKIN, NEFTEPERERAB. ZAVOD, BAKU, USSR.

KOSENKO, V. YE.

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دستہ اعلیٰ

UDC 539.236+539.26+621.416

USSR.

GRIGOR'YEV, O. N., KLOCHKOV, V. P., KOSENKO, V. YE., STADNIK, A. V., SHCHEDETKIN,  
V. N.

"Obtaining and Studying Monocrystalline Films of Silicon on Sapphire and Metal-Oxide-Semiconductor Transistors Based on Them".

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 16-23

Abstract: A study was made of the effect of the degree of perfection of sapphire substrates on the perfection of the silicon films, the mechanism of formation of a large number of defects in films and the effect of structural defects of the films on the primary parameters of instruments manufactured on the basis of them. Sublimation in a vacuum was used to obtain monocrystalline films of silicon on sapphire and silicon on silicon. The substrates and films were investigated by the methods of x-ray diffraction microscopy. Metal-oxide-semiconductor transistors with characteristics not inferior to the characteristics of analogous instruments made of massive silicon were manufactured from silicon films on sapphire. Topograms of the  $\alpha\text{-Al}_2\text{O}_3$  substrate of 1012 orientation taken by various methods are presented. A procedure for obtaining the films is described by which it is possible to obtain silicon films on sapphire which with respect to structure and properties are not inferior to the best films obtained by the method of thermal decomposition of silane or reduction of silicon halides. There are a large number of defects in the silicon films

USSR  
GRIGOR'YEV, O. N., et al., Poluprovodnikovaya tekhnika i mikroelektronika, No. 6,  
1971, pp 16-23

on sapphire the mechanism of occurrence of which is not fully explained and  
obviously is of a theoretical nature. The volt-ampere characteristics of the  
metal-oxide-semiconductor transistors manufactured by the proposed procedure  
are presented and discussed. The maximum transconductance of transistors with  
a channel width of 100 microns was 300 micromhos and varied within the limits  
of 200-300 micromhos. For transistors with a channel width of 400 microns, the  
transconductance is within the limits of 800-1,000 micromhos.

USSR

UDC 539.274+539.26+621.416

GRIGOR'YEV, O. N., KLOCHKOV, V. P., KOSENKO, V. Ya., STADNIK, A. V.,  
and SHCHETKIN, V. N.

"Preparing and Investigating Monocrystalline Silicon Films on Sapphires and MOS Transistors of That Type"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No. 6, 1971,  
pp 16-23

**Abstract:** As opposed to silicon films deposited on silicon, these films on sapphire permit substantial reductions in the parasitic capacitance of integrated circuits and have other benefits. This paper discusses some problems arising in connection with these devices, such as the effect of the state of the sapphire substrate on the silicon film, the mechanism for the formation of film defects, and the effect of such structural defects on the basic parameters of transistors made by this process. The specimens used in the experiments of the present paper were of the silicon on silicon and the silicon on sapphire type, with the deposition made in vacuum heating chambers of stainless steel. In one type of specimen the films were sputtered on the substrate in a vacuum of 1-5.

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USSR

GRIGOR'YEV, O. N., et al., Poluprovodnikovaya tekhnika i mikroelektronika,  
No 6, 1971, pp 16-23

$10^{-6}$  mm Hg without preliminary heating, and in a vacuum of  $1-2 \cdot 10^{-7}$  mm Hg.  
with preliminary heating. The authors assert that the specimens made by  
their method are in no way inferior to the best of those obtained by thermal  
decomposition of silane or the reduction of silicon gallium. They find  
also that silicon on sapphire transistors are at least as good as those of  
silicon on silicon. They are associated with the Semiconductor Institute of  
the Ukrainian Academy of Sciences.

2/2

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--SURFACE ELECTRICAL CHARACTERISTICS OF SINGLE CRYSTAL SILICON FILMS  
ON SAPPHIRE -U-  
AUTHOR-(04)-LISENKO, V.S., LITOVCHENKO, V.G., KOSENKO, V.YU., IGNATKOV,  
V.D.  
COUNTRY OF INFO--USSR *K*  
SOURCE--UKRAINS'KI FIZICHNII ZHURNAL, VOL. 15, MAR. 1970, P. 409-414.  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SILICON SINGLE CRYSTAL, PHOTOCONDUCTIVITY, BIBLIOGRAPHY, METAL  
FILM, EPITAXIAL PN JUNCTION, EPITAXIAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/1923

STEP NO--UR/0185/70/015/000/0409/0414

CIRC ACCESSION NO--AP0118085

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23 OCT 70

2/2 028  
CIRC ACCESSION NO--AP0118885  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF FIELD EFFECT,  
CONTACT POTENTIAL DIFFERENCE, AND PHOTCONDUCTIVITY MEASUREMENTS TO  
DETERMINE THE SURFACE ELECTRICAL CHARACTERISTICS OF P AND N TYPE  
HETEROEPITAXIAL SILICON FILMS ON SAPPHIRE. A SIGNIFICANT NONUNIFORMITY  
OF THE FREE SURFACE POTENTIAL IS SHOWN TO BE CAUSED BOTH BY SURFACE  
BOUNDARIES IN MOSAIC TYPE FILMS AND BY HETEROGENEITY OF THE SURFACE.  
THE FREE SURFACE CONTAINS SIGNIFICANT CONCENTRATIONS OF BOTH ACCEPTOR  
AND DONOR CENTERS. THE SURFACE ADJACENT TO THE SAPPHIRE SUBSTRATE  
EXHIBITS RELATIVELY HIGH FIELD EFFECT MOBILITY, WITH ACCEPTOR  
PREDOMINANCE IN BOTH N AND P TYPE FILMS. THE PHOTCONDUCTIVITY OF THE  
FILMS HAS A MAINLY UNIPOLAR NATURE. FACILITY: AKADEMIA NAUK  
UKRAINS'KOI RSR. INSTITUT NAPIVPROVIDONIKIV, KIEV. UKRAINIAN SSR.

UNCLASSIFIED

UDC 539.214;539.374

USSR

GRIGORASH, V. F., KOSENKO, Z. I.

"Physically Nonlinear Problem for a Circular Plate Weakened by a Square Opening"

V sb. Kratk. tezisy dokl. k konf. po povrezhdennyam i eksploat. nadezhnosti sudovykh konstruktsiy, 1972 (Brief Topics of Papers at the Conference on Failure and Operational Reliability of Ship Designs, 1972 -- Collection of Works), Vladivostok, 1972, pp 52-59 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V436)

Translation: An isotropic circular plate of a physically nonlinear material with a central square opening (with rounded corners) to which a uniform pressure  $P$  is applied to the contour is considered. The null (Linear) and first approximations of the solution of the problem are constructed on the basis of a version of the G. Kauder theory by the small parameter method in combination with the A. S. Kosmodamianskiy method for the doubly connected region considered. Calculations of linear stresses and corrections to them for three values of  $P$  taking into account the effect of the physical nonlinearity of the material in the stress state of the plate in the first approximation

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Z. I., Kratik, tezisy dokl. k konf. po povrezh-  
dezhnosti sudaovykh konstruktsiy, 1972, Vladivostok,  
for a particular case of the geometric parameters, also con-  
trol contour of the plate. It was concluded from analysis of the results  
of one value of  $P$  are diagrams of the annular stresses of the material  
at in this case concentration of stresses around angular points. The nonlinear  
increases the change sign with an increase in the distance between contours,  
corrections change sign with an increase in the distance between contours,  
8 ref. N. P. Fleyshman.

- 63 -

USSR

GRIGORASH, V. F., KOSENKO, Z. I., Kratk. tezisy dokl. k konf. po povrezhdeniyam i ekspluat. nadezhnosti sudaovykh konstruktsiy, 1972, Vladivostok, 1972, pp 52-59

are given for a particular case of the geometric parameters. Also constructed for one value of  $P$  are diagrams of the annular stresses on the internal contour of the plate. It was concluded from analysis of the results that in this case consideration of the physical nonlinearity of the material increases the concentration of stresses around angular points. The nonlinear corrections change sign with an increase in the distance between contours.

8 ref. N. P. Fleyshman.

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- 63 -

USSR

UDC: 621.3.049.75

KOSENKOVA, A. S., PAVLENKO, G. I., POPOV, V. I."A Method of Protecting the Film Elements of Microcircuits"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarknyye znaki,  
No 10, Apr 71, Author's Certificate No 298087, Division H, filed 28 Mar 69,  
published 11 Mar 71, p 197

Translation: This Author's Certificate introduces a method of protecting the film elements of microcircuits such as contact areas and lines which also contain resistive elements based on pure metals and alloys. The method of protection is based on use of a material with high vapor tension such as cadmium or zinc by sublimation in vacuum with complete reflection of the material from the dielectric material of the substrate. As a distinguishing feature of the patent, the method is designed to ensure that there will be no changes in the parameters of film resistors, while the technological cycle is simplified and the cost of the finished product is reduced. Before coating with the protective material, the substrate with vapor-deposited film elements is heated in a vacuum to 393-453°K, and then the protective material is condensed on the elements to be protected while the rate of sublimation is regulated by controlling the temperature of the vaporizer while it is simultaneously completely reflected from the resistive film elements of the microcircuits.

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CS2

SHAGINOV, M. V., KOLCHIN, V. P., VASIL'EV, V. V., STABILIT, A. S., TROTSKII,  
V. N., "Obtaining and Studying Monocrystalline Films of Silicon by Suprasil and Metal  
Oxide-Semiconductor Transistors Based on Them,"

Kiev, Politekhnicheskaya Akademiya, 1981, pp. 160-161.

Abstract: A study was made of the method of the deposition of silicon monocrystalline films on the perfection of the structure of semiconductor transistors based on them.

USSR

UDC 539.234+539.26+621.416

GRIGOR'YEV, G. N., KLOCHKOV, V. P., KOSENKO, V. Ye., STADNIK, I. V.,  
and SHCHETKIN, V. N.

"Preparing and Investigating Monocrystalline Silicon Films on Sapphires and MOS Transistors of That Type"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No. 6, 1971,  
pp 16-23

Abstract: As opposed to silicon films deposited on silicon, these films on sapphire permit substantial reductions in the parasitic capacitance of integrated circuits and have other benefits. This paper discusses some problems arising in connection with these devices, such as the effect of the state of the sapphire substrate on the silicon film, the mechanism for the formation of film defects, and the effect of such structural defects on the basic parameters of transistors made by this process. The specimens used in the experiments of the present paper were of the silicon on silicon and the silicon on sapphire type, with the deposition made in vacuum heating chambers of stainless steel. In one type of specimen the films were sputtered on the substrate in a vacuum of 1-3·  
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USSR

GRIGOR'YEV, O. N., et al., Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 16-23

$10^{-6}$  mm Hg without preliminary heating, and in a vacuum of  $1-2 \cdot 10^{-7}$  mm Hg with preliminary heating. The authors assert that the specimens made by their method are in no way inferior to the best of those obtained by thermal decomposition of silane or the reduction of silicon galleoids. They find also that silicon on sapphire transistors are at least as good as those of silicon on silicon. They are associated with the Semiconductor Institute of the Ukrainian Academy of Sciences.

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1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--SURFACE ELECTRICAL CHARACTERISTICS OF SINGLE CRYSTAL SILICON FILMS  
ON SAPPHIRE -U-  
AUTHOR-(04)-LISENKO, V.S., LITOYCHENKO, V.G., KOSENKO, V.YU., IGNATKOV,  
V.D.  
COUNTRY OF INFO--USSR  
K  
SOURCE--UKRAINS'KI FIZICHNII ZHURNAL, VOL. 15, MAR. 1970, P. 409-414.  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SILICON SINGLE CRYSTAL, PHOTCONDUCTIVITY, OXIDOGRAPHY, METAL  
FILM, EPITAXIAL PN JUNCTION, EPITAXIAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/1923

STEP NO--UR/0185/70/015/000/0409/04E4

CIRC-ACCESSION NO--APO118885

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118885

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF FIELD EFFECT, CONTACT POTENTIAL DIFFERENCE, AND PHOTOCONDUCTIVITY MEASUREMENTS TO DETERMINE THE SURFACE ELECTRICAL CHARACTERISTICS OF P AND N TYPE HETEROEPITAXIAL SILICON FILMS ON SAPPHIRE. A SIGNIFICANT NONUNIFORMITY OF THE FREE SURFACE POTENTIAL IS SHOWN TO BE CAUSED BOTH BY SURFACE BOUNDARIES IN MOSAIC TYPE FILMS AND BY HETEROGENEITY OF THE SURFACE. THE FREE SURFACE CONTAINS SIGNIFICANT CONCENTRATIONS OF BOTH ACCEPTOR AND DONOR CENTERS. THE SURFACE ADJACENT TO THE SAPPHIRE SUBSTRATE EXHIBITS RELATIVELY HIGH FIELD EFFECT MOBILITY, WITH ACCEPTOR PREDOMINANCE IN BOTH N AND P TYPE FILMS. THE PHOTOCONDUCTIVITY OF THE FILMS HAS A MAINLY UNIPOLAR NATURE. FACILITY: AKADEMIA NAUK UKRAINS'KOI RSR. INSTITUT NAPIVPROVIDNIKIV, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

GRIGORASH, V. F., KOSENKO, Z. I., Kratk. tezisy dokl. na konf. po povrezhdeniyam i ekspluat. nadezhnosti sverkrykh konstruktsiy, 1972, Vladivostok, 1972, pp 52-59

are given for a particular case of the geometric parameters. Also constructed for one value of  $P$  are diagrams of the annular stresses on the internal contour of the plate. It was concluded from analysis of the results that in this case consideration of the physical nonlinearity of the material increases the concentration of stresses around angular points. The nonlinear corrections change sign with an increase in the distance between contours.  
8 ref. N. P. Fleyshman.

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- 63 -

USSR

UDC: 621.3.049.75

KOSENKOV, A. S., PAVLENKO, G. I., POPOV, V. I.**"A Method of Protecting the Film Elements of Microcircuits"**

Moscow, Otkrytiya, izobreteniya, promyshlennyye obruztsy, tovarnyye znaki,  
No 10, Apr 71, Author's Certificate No 298087, Division M, filed 28 Mar 69,  
published 11 Mar 71, p 197

Translation: This Author's Certificate introduces a method of protecting the film elements of microcircuits such as contact areas and lines which also contain resistive elements based on pure metals and alloys. The method of protection is based on use of a material with high vapor tension such as cadmium or zinc by sublimation in vacuum with complete reflection of the material from the dielectric material of the substrate. As a distinguishing feature of the patent, the method is designed to ensure that there will be no changes in the parameters of film resistors, while the technological cycle is simplified and the cost of the finished product is reduced. Before coating with the protective material, the substrate with vapor-deposited film elements is heated in a vacuum to 393-453°K, and then the protective material is condensed on the elements to be protected while the rate of sublimation is regulated by controlling the temperature of the vaporizer while it is simultaneously completely reflected from the resistive film elements of the microcircuits.

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USSR

UDC 621.396.6-181.5

BELOUS, M. V., KOGANOV, A. S., PAVLENKO, G. I., POLOVIN, V. I.,  
CHUGAYEV, V. N., SHCHERBIR, V. N.

"On the Properties of Conductive Elements of Thin-Film Microcircuits  
Made by Vaporization of Aluminum, Nickel, Copper and Copper-Nickel Alloy".

*Elektron. tekhnika. Nauch.-tekhn. sp. Mikroelektronika (Microelectronics)*,  
Technology. Scientific and Technical Collection. Microelectronics),  
1971, vyp. 1(27), pp 101-109 (from *Radiotekhnika i elektronika*, No 6, Aug 71,  
Abstract No 37277)

Translation: The authors studied the electrical, structural, optical and other properties of films made by vacuum deposition of aluminum, nickel, copper and an alloy of 94.5% Cu, 5% Ni and 0.5% Mn. It is shown that alloying copper with elements having a vapor pressure which differs markedly from that of the base of the alloy enables an appreciable improvement of the required properties of the films without any pronounced adverse effect on their conductivity. Resumé.

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USSR

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DDT: 021.3.040.75.007.35

KOSENKOV, A. S., PAVLENKO, G. I., FCPOV, V. I.

"An Alloy for Making Microcircuits"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Osnovaniya, Kremlyovskaya, no 15,  
1970, Author's Certificate no 289220, filed 11 Mar 69, p 33

Abstract: This author's certificate introduces: 1. An alloy for making microcircuits based on copper, manganese and nickel. As a distinguishing feature of the patent, the alloy is designed for producing films with the necessary adhesion and anticorrosion properties, and for increasing the productivity of vaporizing equipment. Titanium is added to the alloy composition and the initial components are taken in the following ratios: manganese 0.5-2%; nickel 1-3%; titanium 0.05-0.5%; the remainder copper. 2. A modification of this alloy in which the distinguishing feature is reduction of the electrical resistance of films by partial or complete substitution of cobalt for nickel.

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1/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE—LIQUID PHASE MASS TRANSFER IN A TURBULENT CONTACT ABSORBER -U-

AUTHOR--(02)-YELENKOV, D., KOSEV, A.

K

CCOUNTRY OF INFO--USSR

SOURCE—TEOR. OSN. KHM. TEKHNOL. 1970, 4(1), 110-15

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--MASS TRANSFER, GAS ABSORPTION, OXYGEN, WATER, GAS FLOW,  
DIFFUSION COEFFICIENT, REYNOLDS NUMBER

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1987/0125

STEP NO--UR/0455/10/004/001/0110/0115

CIRC ACCESSION NO--AP0103805

UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0103805

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MASS TRANSFER OF A GAS (O<sub>2</sub>) FROM A LIQ. (H<sub>2</sub>O) WAS STUDIED IN A TURBULENT CONTACT ABSORBER. A CROSS SECTIONAL DIAGRAM OF THE ABSORBER AND ITS MODE OF OPERATION ARE PRESENTED. THE ABSORBER CONTAINED A TERNARY SYSTEM COMPOSED OF O<sub>2</sub>, H<sub>2</sub>O, AND HOLLOW POLYSTYRENE SPHERES, SOLID POLYPROPYLENE SPHERES, AND SOLID ROSIN PARAFFIN SPHERES 17-18 MM IN DIAM. THE MASS TRANSFER COEFF. (K<sub>SUBTS</sub>) WAS A LINEAR FUNCTION OF THE GAS FLOW RATE UNTIL IT REACHED A CERTAIN MAX. THE INCREASE IN K<sub>SUBTS</sub> WITH THE GAS FLOW RATE WAS ATTRIBUTED TO AN INCREASED AMT. OF RETAINED LIQ. AND HIGHER TURBULENT FLOW. K<sub>SUBTS</sub> DEPENDS ON THE D. OF THE PACKING. AN EQUATION WAS DERIVED FOR CALCg. THE NO. OF LIQ. TRANSFER UNITS IN TERMS OF THE DIFFUSION COEFF., SCHMIDT NO., AND REYNOLDS NO.

FACILITY:

VYSSH. KHIM. TEKHNOL. INST., SOFIA, BULG.

UNCLASSIFIED

USSR

UDC 539/072

DEREVYANKO, N. I. and KOSEVICH, A. M., Kharkov Structural Engineering Institute and Kharkov State University

"Mechanics of an Elastic Body With Internal Rotations"

Kiev, Prikladnaya Mekhanika, Vol 8, No 12, Dec 72, pp 93-99

**Abstract:** The deformed state of a medium is described with the aid of the strain tensor, curvature tensor and vector of local slw and its derivatives. The stress state of a medium is characterized by the tensor force stresses, the two tensors of moment stresses and the vector of volume moments. The work of internal forces and moments, elastic energy, physical relationships and equations of motion were recorded. The resolving equations of plane strain with the addition of three functions of stresses were compiled. The problem of deformation of an unbounded plate with a circular opening was reduced to a system of two integral equations of the Volterra type. The plane problem contains two characteristic parameters with the dimension of length. 4 bibliographic references.

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USSR

KOSEVICH, A. M., and KHOKHLOV, V. I., Khar'kov State University imeni A. M. Gor'kiy

"Rayleigh Waves as the Limiting Case of Oscillations of a Crystal With a Plane Defect"

Leningrad, Fizika Tverdogo Tela, Vol. 12, No. 8, Aug 70, pp 2507-2509

Abstract: The work of I. M. Lifshits and L. N. Rozentsveig, who showed that in studying the dynamics of a crystal lattice the free surface of a crystal can be considered as a certain local perturbation in an ideal unbounded crystal, is extended. The authors study an analogous situation in the dynamics of a continuous elastic medium: namely, the possibility of a quantitative description of the free surface of an elastic half-space as a specific local perturbation of simple form in an unbounded elastic medium. The authors previously studied long-wave oscillations of an elastic medium localized close to a plane defect. An isotropic medium with Lamé coefficients  $\lambda$  and  $\mu$  was considered in which there was a plane-parallel layer of elastic material with different elastic moduli. If the  $z$ -axis is perpendicular to the plane of the defect, it was shown that the elastic moduli of this layer of the medium  $\lambda'$  and  $\mu'$  can be written in the form

$$\lambda' = \lambda + Lh\delta(z); \quad \mu' = \mu + Mh\delta(z). \quad (1)$$

1/2

KOSEVICH, A. M., and KHOKHLOV, V. I., Fizika tverdogo tela, Vol. 12, No. 8, Aug. 70, pp 2507-2509

where  $\delta(z)$  is the delta-function,  $h$  is the thickness of the plane defect, and  $L$  and  $M$  are the characteristics of its elastic properties. If  $k$  is the component of the wave vector of the surface wave along the plane of the defect, (1) has meaning for  $hk < 1$ . The relationships (1) putting the local perturbations into the theory of elasticity can be used to study the long-wave oscillations at a free surface of an elastic half-space if the following substitutions are made:

$$L = -\lambda, \quad M = -\mu,$$

and if one restricts the possible values of  $k_z$  to the limiting value  $k_0$  in the Fourier transformation with respect to the  $z$ -axis to ensure convergence of all integrals this will ensure the condition

$$hk_0 = \pi;$$

i.e., introduce a minimum length for the elastic wave equal to  $2h$ . The validity of this is illustrated by deriving a law for the dispersion of Rayleigh waves from the law for the dispersion of elastic oscillations localized in the plane of the defect.

2/2

1/2 028 UNCLASSIFIED PROCESSING DATE--040EC70  
TITLE--MECHANICAL MODEL OF LONG WAVE OSCILLATIONS IN FERRO ELECTRIC TYPE  
CRYSTALS -U-  
AUTHOR--(021)-KOSEVICH, A.M., BOGACHEK, YE.N.

COUNTRY OF INFO--USSR *R*

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(3), 477-86.

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FERROELECTRIC CRYSTAL, OSCILLATION, MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0874

STEP NO--UR/0185/T0/015/003/0477/0486

CIRC-ACCESSION NO--AP0136309

2/2 028 UNCLASSIFIED PROCESSING DATE--04 DEC 70  
CIRC ACCESSION NO--AP0136308  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FEATURES WERE STUDIED OF THE  
DISPERSION RULE FOR LONG WAVE OSCILLATION DUE TO THE CRYSTAL'S LACK OF A  
CENTER OF INVERSION. A VARIATION OF THE MECH. MODEL DISCUSSED EARLIER  
(H. HAHN AND BIEM, 1963) WAS STUDIED. THE N FOR SUCH CRYSTALS WAS ALSO  
STUDIED. FACILITY: KHARKOV. GOSUNIV., KHARKOV, USSR.

USSR

UDC 536.421.4+536.421.1

KOSEVICH, V. M.

"Interface Defects Arising in the Oriented Growth of Crystals"

V sb. Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations -- collection of works), Minsk, "Nauka i tekhn." 1971, pp 62-70 (from RZh-Fizika, No 9, 1971, Abstract No 9E379)

Translation: Models of the interfaces of epitaxial crystals in contact with the substrate and with each other are proposed. Methods are described for compensating for the lack of correspondence due to elastic deformations, dislocations of noncorrespondence, point defects, and two-dimensional boundaries. A mechanism of the noncorrespondences arising because of the mutual shift of neighboring epitaxial crystals is proposed.

1/1

- 53 -

1/3 03C UNCLASSIFIED PROCESSING DATE--20NOVTC  
TITLE--FORMATION OF THE STRUCTURE OF LEAD CHALCOGENIDE EPITAXIAL FILMS IN  
MICA -U-  
AUTHOR-(05)-KOSSEVICH, V.M., PALATNIK, L.S., ZOZULYA, I.P., ZOZULYA, I.V.,  
SOKRIN, V.K.  
COUNTRY OF INFO--USSR *K*

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1363-73

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--MICA, EPITAXIAL GROWTH, CRYSTALLIZATION, CRYSTAL ORIENTATION,  
ELECTRON MICROSCOPY, LEAD COMPOUND, TELLURIUM, Selenide, NUCLEATION,  
POLYCRYSTALLINE FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0550

STEP NO--0K/C181/73/016/005/1363/1373

CIRC.ACCESSION NO--APP131445

2/3 030

UNCLASSIFIED

PROCESSING DATE--20 Nov 70

CIRC ACCESSION NO--APIO131445

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. BY THE TRANSMISSION ELECTRON MICROSCOPY METHOD ORIENTATION, TYPE OF GROWTH, AND AGGREGATION OF ISOLATED PARTICLES AS WELL AS THE DEFECT STRUCTURE WERE STUDIED OF CONTINUOUS EPITAXIAL FILMS OF PBSE AND PBOE ON MICA. WHEN THE SUBSTRATE IS AT 150-400DEGREES THE PBSE FILMS NUCLEATE ON MICA CRYSTALS IN 2 ORIENTATIONS: (111) (110) AND (CO1) (110) (001) (010) OF MICA. IN PBOE FILMS ORIENTATION (CO1) (110) APPEARS ONLY AT THE TEMP. OF Y SUSP GREATER THAN 280DEGREES. PARTICLES WITH ORIENTATION (111) ACQUIRE 9000 FACES STARTING WITH THE EARLIEST STAGES OF CONDENSATION AND INCREASE PRIMARILY UPWARD. PARTICLES WITH THE ORIENTATION (001) ARE PLANE, THIN, AND POSSESS AT THE INITIAL STAGES OF CONDENSATION IRREGULAR CONTOURS AND A LARGE NO. OF INTERNAL Voids. JOINING OF THESE PARTICLES WITH THE PLANES (001) WITH THE PLANE OF CLEAVAGE OF MICA (001) TAKES PLACE BY MEANS OF DISCREPANCY OF DISLOCATIONS. IN PBOE AND PBOE ON MICA VARIOUS CASES ARE POSSIBLE OF AGGREGATION OF ISOLATED PARTICLES DEPENDING ON THEIR SHAPE AND LOCATION RELATIVE TO THE DIRECTION (010) OF MICA. AGGREGATION TAKES PLACE WITH THE FORMATION OF PERES ON THE CONTACT BOUNDARY. PERES ARE LOCATED AT THOSE POINTS OF THE DISTORTED LATTICE AT WHICH, ON FURTHER CONDENSATION, DISLOCATIONS APPEAR. THE SLOWING DOWN OF AGGREGATION WAS OBSERVED BY THE BLUNTLINES FORGED WHEN DISORIENTED EPITAXIAL PARTICLES JOIN. THE MAIN FORM OF THE DEFECTS IN THE STRUCTURE OF CONTINUOUS FILMS OF PBOE AND PBOE ON MICA ARE 2 DIMENSIONAL DEFECTS OF THE TYPE OF TWINNING BOUNDARIES (112) NORMAL TO THE PLANE OF THE FILM.

3/3 030

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APO131445  
ABSTRACT/EXTRACT--DURING RECRYSTN. A TRANSITION TAKES PLACE OF THESE  
BOUNDARIES INTO SLOPING DISTORTIONS OF THE BOUNDARY OF CYLINDRICAL SHAPE  
OF (100) TYPE. FACILITY: KHARKOV, POLITEKH. INST. IM. LENINA,  
KHARKOV, USSR.

USSR

UDC 621.373.421.15

BARZHIN, V.YA., BAKLANOV, G.D., KOSHARNOVSKY, G.V., RASEMIAZOV, I.S.,  
VERBITSKAYA, T.N.

"Small-Size Crystal Oscillators, Efficient In A Wide Range Of Temperatures"

V sb. Radioelektronika letatel'n. apparatov (Aircraft Radio Electronics--  
Collection Of Works), No 3, Kar'kov, Kar'kov Aviation Institute, 1971, pp 49-55  
(from RZh:Radiotekhnika, No 2, Feb 72, Abstract No 2D567)

Translation: Problems are considered of thermostabilization of crystal oscillators by ferroelectric materials which possess the effect of temperature auto-stabilization. The results are presented of an experimental investigation of a crystal oscillator at 25 MHz, thermostabilized by Type W-3 ferroelectrics. The possibility is shown of the construction of such an oscillator with a buffer stage, with the dimensions of a bantam tube. 5 ill. 3 ref. Summary.

1/1

USSR

UDC: 621.376.2

'BARZHIN, V. Ya., KRUTOFALOV, E. B., PETROV, A. F., RONDIN, Yu. P., KOSHAR-  
NOVSKIY, G. V.

"A Device for Increasing Depth of Modulation"

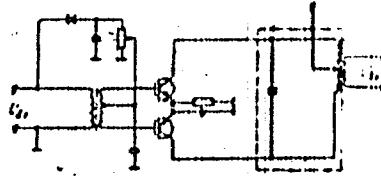
Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,  
No 12, Apr 71, Author's Certificate No 299936, Division H, filed 11 Aug 69,  
published 26 Mar 71, p 204

Translation: This Author's Certificate introduces a device for increasing depth of modulation containing a push-pull amplifier with transformer input, and an amplitude detector. In the collector circuit of the amplifier is a tank circuit tuned to the carrier signal frequency. As a distinguishing feature of the patent, depth of modulation is increased with simultaneous signal amplification, and the depth coefficient is made independent of the amplitude of the input signal by connecting the above-mentioned amplitude detector between the primary winding and the centertap of the secondary winding of the input transformer of the push-pull amplifier.

1/2

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201510016-3

BARZHIN, V. Ye. et al., USSR Author's Certificate No 292150



2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201510016-3"

Simulations

USSR

UDC: 62-501.72

KOSHARSKIY, B. D., Candidate of Technical Sciences, SKOROBOGATOV, M. S.,  
ASHEROV, A. T., Candidate of Technical Sciences

"Modeling a Control Problem in Systems of Organizational Type"

Kiev, Mekhanizatsiya i Avtomatzatsiya Upravleniya, No 1, Jan/Feb 73, pp  
18-26

**Abstract:** The paper gives a formalized description of organizational systems and subsystems as sets of elements ordered in a certain way using two general approaches: a) the system is defined as a set of objects which has predefined properties with fixed relations among them; b) the system is defined as a set of objects on which a predefined relation is realized among fixed properties. These approaches can be used to isolate two kinds of functional subsystems on any hierarchical level of an organizational system for control of an industrial enterprise -- factorial and procedural. Categories of control problems are considered, and it is shown that the functional structure of such a problem can be defined in terms of the controlling link in a closed feedback loop. A model is described which was used in developing the automated control systems of the West Siberian

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- USSR

KOSHARSKIY, B. D. et al., Mekhanizatsiya i Avtomatizatsiya Upravleniya,  
No 1, Jan/Feb 73, pp 18-26

Metallurgical Plant and the Izyumsk Instrument Making Plant. Practice has shown that the model is sufficiently general for control problems at all hierarchical levels and meets the requirements of engineering practice.

2/2

USSR

UDC 51

KOSHARSKIY, B. D., ASHEROV, A. T., TIMOSHENKO, A. N., TIMCHENKO, N. D., MELYUSH-KINA, L. P.

"Problem of Selecting the First Stage of an Automated Enterprise Control System"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971,  
pp 113-125 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V400)

Translation: The problem of selecting the first stage of automation when introducing an automated enterprise control system is formulated. Possible optimallness and restriction criteria, possible statements of the problem and the statement used in the present paper, the method of solution and the results of experimental research for the Western Siberian Metallurgical Plant are presented.

1/1

USSR

UDC 51

KOSHARSKIY, B.. D., ASHEROV, A. T.

"Models of Functioning of the Automated Enterprise Control System"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971,  
pp 97-112 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V397)

No abstract

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USSR

UDC 577.4

KOSHARSKIY, B. D., ASNEROV, A. T.

"Some Problems of Simulating the Dynamic Structures of Regular Automated Technical-Economic Systems by the Methods of Automaton Theory"

V sb. Avtomaty, gibridn. i upravlyayushch. mashiny (Automata, Hybrid and Control Machines — collection of works), Moscow, Nauka Press, 1972, pp 113-120  
(from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V336)

No abstract

1/1

USSR

UDC: 51

KOSHARSKIY, B. D., ASHEROV, A. T., SKOROBOGATOV, M. S.

"Prediction of Conflict Problems of Operational Control in Automated Technical-Economic Systems"

V sb. Operativn. upr. proiz-vom (Operational Control of Production--collection of works), Moscow, "Nauka", 1971, pp 51-59 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4v504)

Translation: Extraformalistic control problems belonging to the category of conflict problems are considered. The causes giving rise to conflict problems are analyzed, as well as questions of determining the random number of conflict problems over a certain period, determining the stability of the established order of operation of the computing center of an automated control system for management, optimum planning, and accounting for conflict problems Authors' abstract.

1/1

USSR

UDC 539.1.074.3

KRAYTOR, S. N., KOSHAYEVA, K. K.

"The Scintillation Characteristics of the FS-1 Zinc Sulfide Lumiphore"

Khar'kov, Monokristally, Stsintillayatory i Organicheskiye Lyuminofory -- Sbornik (Monocrystals, Scintillators, and Organic Luminescences -- Collection of Works), No 5, 1970, pp 101-105 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 12, 1970, Abstract No 12.32.1501)

Translation: The scintillation characteristics of the FS-1 luminophore in the case of excitation by  $\alpha$ -particles were measured with account taken of weakening of the scintillations in the luminophore layer. It is shown that in this case the relationship of the scintillation amplitude to the energy of the  $\alpha$ -particles is linear in the range of 2.5-5.0 mev, and that the light output of this range is constant. The relationship of the scintillation amplitude to the thickness of luminophore FS-1 has been calculated and experimentally measured for  $\alpha$ - particles with an energy of 4.65 and 3.3 mev. The obtained results are compared with the data of some other works. 4 figures. 5 bibliographic entries.

1/1

Acc. Nr:

AP0037241

Ref. Code: UR 0301

PRIMARY SOURCE: Voprosy Meditsinskoy Khimii, 1970, Vol 16,  
Nr 1, pp 69-72

ON THE CHEMICAL STATE AND CONTENT OF RADIOPROTECTOR IN SOME  
TISSUES OF RAT AT EARLY TIME-INTERVALS AFTER CYSTAMINE  
ADMINISTRATION

Koshcheyenko, N. N.; Filippovich, I. V.; Romantsev, Ye. F.

Institute of Biophysics USSR Ministry of Health, Moscow

The relative content of MEA, cystamine and mixed disulphides of protector with cellular proteins in rat thymus, spleen and liver during 3 hr after i. p. cystamine administration at a radioprotective dose has been studied. It was established that at all time-intervals studied only mercapto-form of the protector has been found in tissues. Cystamine and mixed disulphides content was less than 0.01 μg/g per 25-100 mg of tissue. The coincidence of maximal radioprotective effect and MEA accumulation in the tissues studied after cystamine administration was noted. One and the same biochemical mechanism (or mechanisms) of radioprotective action for MEA and cystamine may be postulated on the base of similarity between time-course of MEA accumulation in various tissues after MEA and cystamine administration. The difference between these results and those from paper of Betz (Betz E H., Mewissen D. J., Lelievre P., Intern. J. Rad. Biol., 1962, 4, 231) probably may be explained by the fact that in the paper of Betz the tissues were not washed before homogenization.

REEL/FRAME  
19730168

-2 A.

Radiobiology

USSR

UDC 615.849.1.015.25.032.331.033

KOSHCHENKO, N. N., FILIPOVICH, I. V., and ROMANTSOV, YE. F.,  
Institute of Biophysics, Ministry of Health USSR, Moscow

"Chemical State and Content of the Radioprotector in Some Rat Tissues  
in Early Periods After Intraperitoneal Administration of Cystamine"

Moscow, Voprosy Meditsinskoy Khimii, Vol 16, No 1, Jan/Feb 70, pp  
69-72

**Abstract:** Spectrophotometric determinations of tissue homogenates indicated that cystamine, after intraperitoneal administration to rats in a dose of 75 mg/kg, accumulated in the thymus, spleen, and liver in the form of beta-mercaptoproethylamine, while unchanged cystamine and mixed disulfides of the radioprotector with proteins were absent. The maximum content of beta-mercaptoproethylamine in tissues was observed 15-30 min after administration of cystamine, i.e., during the period of the maximum radioprotective effect. E. H. Betz et al (Int. J. Radiat. Biol. 4, 231, 1962) used a polarographic method of determination, and found a maximum content of radioprotector in tissues 2 min. after administration of cystamine, but their results were presumably due to the fact that the organs removed from the abdominal cavity were not washed before homogenization.

1/1

USSR

UDC 681.325.65

KOSHCHEYEV, A. A., CHEGLAKOV, V. A.

"Problems of Improving the Accuracy of Converters"

Sb. nauch. tr. Chelyabinsk. politekhn. in-ta (Collected Scientific Works. Chelyabinsk Polytechnical Institute), 1972, No 88, pp 85-91 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 72, abstract No 11B317)

Translation: The paper analyzes errors of converters which change analog voltage to angular displacement of a shaft for matching an analog computer to an actual device. The way that the speed control range limits the accuracy of input signal processing is accounted for. A method is proposed which enables determining the required gain of the servo amplifier to obtain a given range of converter speed control, in which the control error does not exceed the permissible value. It is noted that the method of moments can be used to calculate the converter error. Calculations show that when precision feedback elements are used, drift of the DC amplifier is the main source of converter error. Three illustrations, bibliography of five titles.  
L. P.

1/1

USSR

UDC 662.73-021:643

KOSHCHEYEV, A. K., LIVENTSEV, O. D.

"Quick Method of Analyzing Sevin in Plant Products"

Moscow, Khimiya v Sel'skosh Sil'vye, No 1, 1972, p 32

**Abstract:** A highly sensitive simple luminescent-chromatographic method of analyzing residual amounts of sevin in plant products is described. The use of a mixture of acetone and caustic soda as the solvent permits extraction of chromatography with heating of the sevin to 1-naphthyl carbamate by irradiation in ultraviolet light, thereby excluding a number of corrections at the separation of scarce reagents. The sensitivity of the method is determined by the sample. The method can be used under agricultural conditions in agricultural, veterinary and public-health laboratories.

3/1



USSR

UDC 615.9/613.2

KOSHCHEYEV, A. K., and LIVSHITS, O. D.

"A Rapid Method for Determining Sevin in Food Products"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 11, 1970, pp 70-71

**Abstract:** A quick, convenient, sensitive, and inexpensive method is suggested for detecting sevin on fruits and leaves. The object to be investigated is rubbed with a cotton-tipped stick moistened with 0.1 N sodium hydroxide solution in 50% ethyl alcohol. The stick is then put in a dark place and exposed to ultraviolet radiation. If sevin is present, the stick luminesces a greenish-blue color; if the pesticide is absent, the luminescence is dark violet. The existence of a pollutant on the surface of fruits or leaves does not have any effect on the quality of the reaction. The entire procedure takes only 3 to 5 minutes.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--IMPROVEMENT OF THE DESIGN OF THE PR 7 HYDRAULIC PRESS -U-

AUTHOR--(02)-KOSHCHEYEV, G.A., SUVOROV, A.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, OGNEUPORY, NO 3, MAR 70, PP 18-20

DATE PUBLISHED---MAR 70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--HYDRAULIC PRESS, REFRACTORY MATERIAL, HYDRAULIC CYLINDER,  
HYDRAULIC PUMP, FILTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/0708

STEP NO--UR/0131/70/000/003/001870020

CIRC ACCESSION NO--AP0134443

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134443

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 1500 TON PR T HYDRAULIC PRESS HAS BEEN IN USE IN ONE MAGNESTIUM PRODGTS REFRACOTRY SECTION SINCE 1964 FOR THE MANUFACTURE OF REFRACOTRY PRODUCTS. OPERATION OF THE PRESS HAS SHOWN VARIOUS DESIGN DEFECTS OF INDIVIDUAL UNITS, RESULTING IN THE PRODUCTION OF PRODUCTS WITH EXCESSIVE VARIATIONS IN THICKNESS. THE MODIFICATIONS WHICH WERE PERFORMED TO IMPROVE CONSISTENCY OF PRESS OPERATION ARE DESCRIBED. THEY INCLUDED RATHER EXTENSIVE MODIFICATIONS TO THE HYDRAULIC SYSTEM, REPLACEMENT OF A CYLINDER WITH A CYLINDER OF SMALLER DIAMETER, REROUTING OF OIL SUPPLY TO THE CONTROL APPARATUS, BYPASSING A 50 ATMOSPHERE SYSTEM AND PRESSURE CYLINDER, SIMPLIFICATIONS OF THE ELECTRICAL SYSTEM, REPLACEMENT OF A COOLING AND FILTER PUMP, REPLACEMENT OF ROTATIONPLUNGER PUMPS WITH PLUNGER PUMPS, AND INSTALLATION OF ADDITIONAL OIL FILTERING DEVICES.

UNCLASSIFIED

USSR

  
KOSHCHEYEV, G. A., SUVOROV, A. V.

"Improvement of the Design of the PR-7 Hydraulic Press"

Moscow, Ogneupory, No 3, Mar 70, pp 18-20

Abstract: The 1500-ton PR-7 hydraulic press has been in use in one magnesium products refractory section since 1964 for the manufacture of refractory products. Operation of the press has shown various design defects of individual units, resulting in the production of products with excessive variations in thickness. The modifications which were performed to improve consistency of press operation are described. They included rather extensive modifications to the hydraulic system, replacement of a cylinder with a cylinder of smaller diameter, rerouting of oil supply to the control apparatus, bypassing a 60 atmosphere system and pressure cylinder, simplifications of the electrical system, replacement of a cooling and filter pump, replacement of rotation-plunger pumps with plunger pumps, and installation of additional oil filtering devices.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CUTTING OUT SILICON POWER RECTIFIERS AT A HIGHER FREQUENCY -U-

AUTHOR--(03)-KUSHLEEV, L.G., NOVIKOV, G.I., TRETYAK, T.P.

COUNTRY OF INFO--USSR

K

SOURCE--MOSCOW, ELEKTROTEKHNIKA, 1970, NR 2, PP 50-52

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SILICON RECTIFIER, HIGH FREQUENCY, PN JUNCTION, RC CIRCUIT,  
PROTECTIVE EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1239

STEP NO--UR/0292/70/000/002/0050/0052

CIRC ACCESSION NO--APO123200

2/2 023

UNCLASSIFIED

PROCESSING DATE--30DC17C

CIRC ACCESSION NO--AP0123200

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE GIVEN FROM AN EXPERIMENTAL STUDY OF THE EFFECT OF P,N, JUNCTION TEMPERATURE, RATE OF CURRENT VARIATION, AND PROTECTIVE RC,CIRCUIT PARAMETERS ON THE CUTTING OFF PROCESS OF SILICON POWER RECTIFIERS. RESULTS ARE GIVEN FROM TIME MEASUREMENTS FOR CUTTING OFF SILICON RECTIFIERS. EXPERIMENTAL RELATIONSHIPS ARE PRESENTED SHOWING THE EFFECT OF THE ABOVE FACTORS ON CUTTING OFF TIME. ORIGINAL ARTICLE: SIX ILLUSTRATIONS AND NINE BIBLIOGRAPHIC ENTRIES.

UNCLASSIFIED

1/2 019

UNCLASSIFIED

PROCESSING DATE--04OECT0

TITLE--POWERFUL AUTONOMIC VOLTAGE INVERTERS -U-

AUTHOR-(02)-KOSHCHEYEV, L.G., TRETYEK, T.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, E! "KRICHESTVO, NO 3, 1970, PP 61-65"

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENG., ENERGY CONVERSION  
(NON-PROPULSIVE)

TOPIC TAGS--ELECTRIC INVERTER, ALTERNATING CURRENT, DIRECT CURRENT,  
CIRCUIT DESIGN, NONROTARY ELECTRIC POWER CONVERTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1204

STEP NO--UR/0105/70/000/003/0061/0065

CIRC ACCESSION NO--AP0123169

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0123169

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN AUTONOMOUS VOLTAGE INVERTER INTENDED FOR THE CONVERSION OF THE D-C CURRENT TO THE A-C CURRENT OF HIGHER FREQUENCY IS DESCRIBED. THE INVERTER FOLLOWS THE PATTERN OF AN ANTIPARALLEL CONNECTION OF THE CONTROLLED AND UNCONTROLLED VALVES. THE BASIC DESIGN RELATIONS ARE GIVEN, WHICH CHARACTERIZE THE OPERATION OF THE INVERTER AND PERMIT THE DETERMINATION OF BASIC PARAMETERS OF ITS ARRANGEMENT AND ITS LOAD CHARACTERISTICS. RESULTS OF EXPERIMENTAL INVESTIGATIONS OF THE INVERTER'S OPERATION UNDER CONDITIONS OF ACTIVE LOAD AT A FREQUENCY OF 1000 HZ ARE EXAMINED. BASED ON THIS INVERTER THERE HAS BEEN DEVELOPED A STATIC CONVERTER OF THE D-C CURRENT WITH A CAPACITY OF 3000 KW FOR THE REDUCTION OF VOLTAGE FROM 6600 TO 3300 V.

UNCLASSIFIED

USSR

UDC: 621.373:535.06

DUBNISKEV, Yu. N., LOKHMATOV, A. I., KOSHCHYEV, L. N., SIVOLPOVSKIY, A. A., UTKIN, Ye. N.

"Measuring the Linear Velocity of Motion of a Body by Using the Optical Doppler Effect"

Leningrad, Optika i Spektroskopiya, Vol 34, No 3, Mar 73, pp 587-588

**Abstract:** Shown in the figure is a diagram of a device developed at the Institute of Automation and Electrometry of the Academy of Sciences of the USSR, Siberian Department, for using the Doppler shift of light to measure local linear velocity. The device uses a cadmium laser on 0.44  $\mu$ m with 5 mW of output power. A light beam from the laser 1 operating in the fundamental mode passes through iris 2 and is incident on beam splitter 3. One of the split beams passes through iris 4 and is focused by lens 5 onto the surface of disc 6 whose local linear velocity is to be measured. The disc revolves with angular velocity  $\omega$ . The second split beam is focused by an identical lens 7 onto the surface of a polished glass plate 8 which reflects it through the same lens back to a photodividing plate where it acts as a reference beam, recombining with the signal beam scattered by

1/3

• USSR

DUBNISHCHEV, Yu. N. et al., Optika i Spektroskopiya, Vol 34, No 3, Mar 73,  
pp 587-588

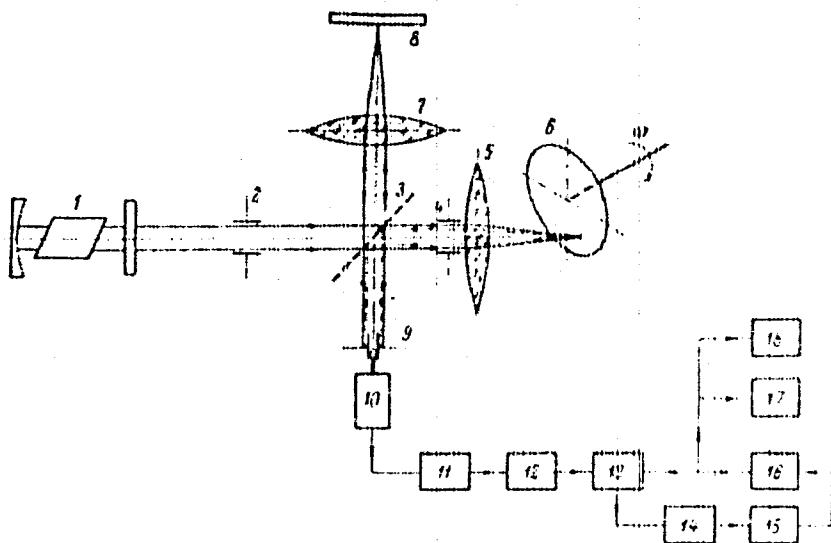
disc 6. The signal and reference beams are trimmed by iris 9 and interfere on the cathode of photomultiplier 10. The Doppler difference frequency from the load of this tube is sent through high-frequency filter 11 and clipper amplifier 12 to a tracking filter made up of phase detector 13, low-frequency filter 14, DC amplifier 15 and frequency-controlled oscillator 16. The signal from the oscillator is sent to spectrum analyzer 17 and digital frequency meter 18. The readings of the meter are proportional to the linear velocity of the disc in the region where the incident beam is focused. The Doppler spectrum of the signal can be analyzed on the spectrum analyzer. The proposed device has an accuracy of 0.5% and can be used for noncontact measurement of the linear velocity of mechanical motion in rolling mills, paper-making machines, etc.

2/3

- 53 -

USSR

DUBNISHCHEV, Yu. N. et al., Optika i Spektroskopiya, Vol. 34, No 3, Mar 73,  
pp 587-588



3/3

1/2 011 UNCLASSIFIED PROCESSING DATE--30 OCT 70  
TITLE--CERTAIN PROBLEM OF SYNTHESIS OF SYSTEM OF OPTIMAL CONTROL -U-

AUTHOR--(04)-ANISIMOV, I.V., BOGOROV, V.E., KOSHCHEYEV, N.N., FOMIN, N.G.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 6, PP 118-123

DATE PUBLISHED----70

SUBJECT AREAS--NECH., IND., CIVIL AND MARINE ENGR., MATHEMATICAL SCIENCES

TOPIC TAGS--OPTIMAL AUTOMATIC CONTROL, PERTURBATION METHOD, ALGORITHM,  
AUTOMATIC CHEMICAL PROCESS CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1009

STEP NO--UR/0103/70/000/006/0110/0123

CIRC ACCESSION NO--A00124668

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124668

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. A PROBLEM OF THE SYNTHESIS OF A SYSTEM OF OPTIMAL CONTROL BY THE INTEGRAL CRITERION FOR A CLASS OF OBJECTS IS CONSIDERED. THE SYSTEM IS ACTED UPON BY CONSTANTLY MEASURED DISTURBANCES. AN ALGORITHM OF THE OPTIMAL CONTROL OF A RECTIFICATION COLUMN UNDER THE DISTURBANCE CONCERNING THE COMPOSITION OF THE INITIAL MIXTURE IS SUGGESTED.

UNCLASSIFIED

USSR

UDC 669.295.5'18'234:620.193.41

CHERNOVA, G. P., KOSHECHKIN, K. I., and TOMASHOV, N. D.

"Corrosive and Electrochemical Behavior of Ti-Mo-Pd Alloys in Solutions of Hydrochloric Acid at 100° C"

V sb. Korroziya i zashchita met. (Metal Corrosion and Protection -- Collection of Works), Moscow, "Nauka," 1970, pp 40-43 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 I831 by the authors)

Translation: A study was made of the corrosion resistance of Ti-Mo alloys (5, 10, 27%) and of the same alloys supplementally doped with 0.2 and 0.5% Pd in 3-20% HCl at 100°. Alloys of Ti with 5 and 10% Mo and 0.2% Pd in 3-10% HCl at 100° approach Ti-27% Mo alloys with regard to corrosion resistance. On the addition of  $Fe^{3+}$  or  $Cu^{2+}$  ions to 20% HCl, Ti-Mo and Ti-Mo-Pd alloys have a corrosion rate  $> 10$  mm/year. This is due to the shift of the corrosion potentials of these alloys in the Mo transpassivation region. One illustration. One table. Bibliography of 10 titles.

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USSR

UDC 629.7.036.3.533.697.4:535.6

KOSHECHKIN, V. V.

"Method of Calculating the Parameters of the Forward Compression Jump as Gas Flows at Supersonic Speed"

Tekhn. Nauchi. Vyp. 10 [Technical Sciences, No 10 -- Collection of Works], Alma-Ata, 1970, pp 176-178, (Translated from Referativnyy Zhurnal Aviatsiyonnye i Raketnye Dvigateli, No 12, 1971, Abstract № 12.34.70, from the Resume).

Translation: On the assumption of "frozen" state of the gas during the process of a compression jump, a formula is concluded for the entropy increment in a compression jump; the use of the formula is illustrated with a numerical example. 2 Biblio. Refs.

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"USSR"

UDC 533.6.011

KOSHECHKIN, V. V.

"A Technique for Calculating the Parameters of a Direct Shock Wave in a Supersonic Gas Flow"

V sb. Tekhn. nauki. Vyp. 10 (Technical Sciences. No. 10 -- Collection of Works), Alma-Ata, 1970, pp 176-178 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3B185)

Translation: The author states as his purpose the derivation of a formula for calculating the increase in entropy in a straight shock in an ideal gas. By integrating the equation for inflow of heat along the sonic line between points corresponding to the state ahead of and behind the shock front, the author obtains the formula

$$s_2 - s_1 = c_v \ln \frac{T_2}{T_1} - R \ln \frac{v_1}{v_2} + (c_v + R) \ln \frac{T_2}{T_1} - R \ln \frac{p_2}{p_1} \quad (7)$$

This formula is also proposed for calculating the entropy jump; its derivation comprises the content of the article.

Abstractors Note: The question considered in the article is elementary. Formula (7) is well known and is given in many textbooks. The derivation of formula (7) proposed in the article is not related to the essence of the matter

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